EDAX Velocity EBSD Camera Series

Product Bulletin – EBSD

- Fastest acquisition for efficient EBSD data collection
- CMOS imaging sensor for high sensitivity and low noise performance
- Accurate and precise data, even at high speeds, powered by EDAX Triplet Indexing and Confidence Index technology
- Optimized EDS-EBSD collection for the highest EDS throughput at the fastest EBSD speeds for a complete analysis of multi-phase materials
- Compatible with patented NPAR™ for improved data quality with challenging samples

The EDAX Velocity™ EBSD camera series offers high-speed electron backscatter diffraction (EBSD) mapping with the best indexing performance on real-world materials. Powered by a CMOS sensor, the Velocity combines fast acquisition with high sensitivity and low noise performance for optimal collection and data quality.

The Velocity camera series is available in four different models:

EDAX Velocity Ultra	Up to 6,700 indexed points per second (ipps)
EDAX Velocity Super	Up to 4,500 ipps
EDAX Velocity Plus	Up to 3,000 ipps
EDAX Velocity Pro	Up to 2,000 ipps

All models can achieve these speeds while providing up to 99% indexing success rates. EDAX's proven Triplet Indexing routine provides orientation precision values of less than 0.1° without needing any specialized processing routines for accurate characterization of deformed microstructures.

The performance of the Velocity camera extends to a wide range of materials, including lower symmetry, multi-phase, and deformed structures. The Velocity series enables efficient data collection on these real-world samples with the quality results needed for optimal materials analysis.

The Velocity EBSD cameras can integrate with compatible EDAX energy dispersive spectroscopy (EDS) detectors for efficient simultaneous EDS-EBSD collection, even at the highest collection speeds. When combined with ChI-Scan™ analysis, this results in useful integrated data for accurate phase differentiation.

Figure 1. EBSD orientation map from additively manufactured 316L was collected at 6,700 ipps with Velocity Ultra with a 99% indexing success rate.

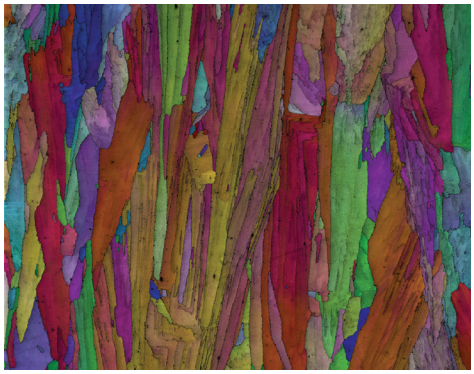

Figure 2. EBSD orientation map from additively manufactured Inconel 718 was collected at 4,500 ipps with Velocity Super with a 99% indexing success rate.

Specifications

- Data collection rates:
  Velocity Pro up to 2,000 ipps
  Velocity Plus up to 3,000 ipps
  Velocity Super up to 4,500 ipps
  Velocity Ultra up to 6,700 ipps
- Low noise CMOS sensor
- Orientation precision less than 0.1° without special correction routines
- 480 x 480-pixel image size (H x W)
- Phosphor screen optimized for high speed/high sensitivity collection
- Custom lens for optimal performance
- Compatible with NPAR and OIM Analysis™
- Compatible with HR-EBSD
- Motorized slide with metal bellows vacuum protection
- PRIAS™ and forward scatter detector included

Features and benefits

Data collection rates up to 6,700 ipps

- Collects EBSD maps in minutes for efficient scanning electron microscope (SEM) use, *in-situ* experiments, and 3D EBSD applications

High-speed, low-noise CMOS sensor

- Provides high sensitivity, low noise images for EBSD indexing at the highest speeds

Orientation precision of less than 0.1°

- Clear characterization of deformed microstructures with standard indexing routines

Highest indexing success rates

- EDAX's proven Triplet Indexing and patented Confidence Index provide unparalleled indexing performance on challenging real-world samples

High-speed simultaneous EDS-EBSD collection

- The Velocity EBSD cameras have been optimized with compatible EDAX EDS detectors for efficient data collection at the highest speeds

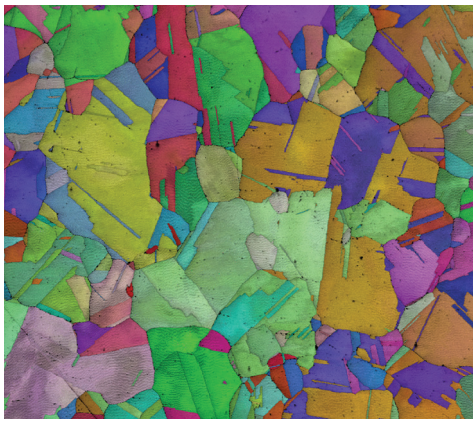

Figure 3. EBSD orientation map from Inconel 600 was collected at 3,000 ipps with Velocity Plus with a 99% indexing success rate.

Figure 4. EBSD orientation map from deformed brass was collected at 2,000 ipps with Velocity Pro with a 99% indexing success rate.

Conclusion

The Velocity EBSD camera series provides the high-speed EBSD mapping and accurate indexing necessary to resolve crystallographic microstructures and quickly and easily solve materials characterization challenges.

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